

Claims

What is claimed is:

- 5 1. A method of producing TaC- transition metal based complex powder comprising the steps of:
- dispersing a mixture of a Ta-containing material and a transition metal-containing water soluble salt into a solvent, stirring the mixture and spray-drying the stirred material to obtain precursor powder;
- 10 calcining the precursor powder to form ultra fine Ta-transition metal complex oxide powder;
- mixing the ultra fine Ta-transition metal complex oxide powder with nano-sized carbon particles, followed by drying to obtain complex oxide powder; and
- subjecting the dried complex oxide powder to reduction/carburization in a non-oxidizing atmosphere.
- 15
2. The method according to claim 1, wherein said mixture of a Ta-containing material is Ta-based chloride salt, or Ta oxalate, and said solvent is water or organic solvent.
- 20 3. The method according to claim 2, wherein the content of the transition metal in the complex powder is in the range of 1 to 30 wt%.
4. The method according to claim 3, wherein the calcinations is performed at a temperature between 250 to 1000°C.

5. The method according to claim 4, wherein the reduction and carburization is performed by reduction at a temperature between 600°C to 1100°C and then reduction and carburization at a temperature between 1000°C to 1350°C.
- 5 6. The method according to claim 1, wherein the content of the transition metal in the complex powder is in the range of 1 to 30 wt%.
7. The method according to claim 1, wherein the calcinations is performed at a temperature between 250 to 1000°C.
- 10 8. The method according to claim 1, wherein the reduction and carburization is performed by reduction at a temperature between 600°C to 1100°C and then reduction and carburization at a temperature between 1000°C to 1350°C.